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Notice of Allowability	Application No.	Applicant(s)	
	10/616,044	YANG ET AL.	
	Examiner	Art Unit	
	Luan V. Van	1753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--
 All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Appeal brief filed May 22, 2006.
2. ☒ The allowed claim(s) is/are 1-31.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| <ol style="list-style-type: none"> 1. <input type="checkbox"/> Notice of References Cited (PTO-892) 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date <u>2/8/06, 2/9/06, 2/16/06</u> 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material | <ol style="list-style-type: none"> 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____ 7. <input type="checkbox"/> Examiner's Amendment/Comment 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance 9. <input type="checkbox"/> Other _____ |
|---|--|

DETAILED ACTION

Allowable Subject Matter

The following is an examiner's statement of reasons for allowance:

The instant invention is distinguished over the prior art of record by providing an ionic membrane separating the catholyte solution from the anolyte solution, wherein the difference between the catholyte solution and the anolyte solution is that the catholyte solution comprises one or more additives. The prior art of record neither teaches nor suggests a combination of limitations recited in the instant claims.

Mayer et al. teach a transport barrier 209 between an anode and a cathode to separate an anolyte and a catholyte and prevent mixing thereof. The examiner in the previous office action broadly interpreted the transport barrier 209 of Mayer et al. to be an ionic membrane. However, the applicant's new arguments presented in the appeal brief dated May 22, 2006, specifically stating that the porous chemical transport barrier 209 of Mayer et al. is not an ionic membrane is persuasive; therefore, the rejections are withdrawn. The porous chemical transport barrier 209 of Mayer et al. limits chemical transport, prevents non-ionic organic species from entering the anolyte, but allows ionic species to pass through. Thus, the porous chemical transport barrier 209 of Mayer et al. differentiates ionic species from non-ionic organic species. However, Mayer et al. do not teach, show, or suggest any membrane, which differentiates different types of ionic species. The applicant asserts that an ionic membrane allows only a particular type of ionic species to travel through, while preventing another type of ionic species from

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traveling or passing through. An ionic membrane may allow positively charged ionic species to pass through, while prevents passage of negatively charged ionic species. Also, an ionic membrane may allow negatively charged ionic species to pass through, while prevents passage of positively charged ionic species. Accordingly, the porous chemical transport barrier 209 of Mayer et al is not an ionic membrane.

Woodruff et al. interface member 700, which is a filter or ion-membrane designed to be positioned vertically in order to allow a secondary fluid flow F2 to pass and join a primary fluid flow Fp, and prevent bubbles from the secondary fluid flow F2 to pass, forcing bubbles in the secondary fluid flow F2 to rise. (paragraphs 81, 83, 86-89.) When the interface member 700 is an ion-membrane, it prevents particles, organic additives, and bubbles in the secondary fluid flow F2 to pass through into the primary fluid flow Fp and eliminates the consumption of the additives at the anode and the need to replenish the additives at the anode because the additives supplied to the secondary fluid flow F2, which can be an anolyte, do not affect the primary fluid flow Fp. (See, paragraphs 88-89.) Thus, the anolyte of Woodruff et al. in the secondary fluid flow F2 includes additives. Woodruff et al. do not describe the difference between a catholyte solution and an anolyte solution is that the catholyte solution comprises one or more additives.

Since the prior art of record neither teaches nor suggests the combination of steps recited in the instant claims, one skilled in the art would not have been motivated to perform the claimed process.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

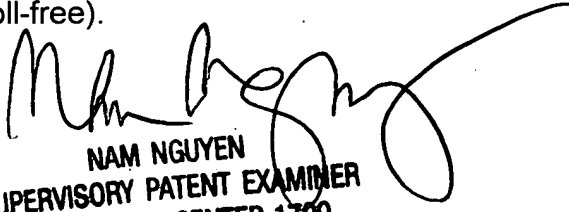
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Luan V. Van whose telephone number is 571-272-8521. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on 571-272-1342. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LWV
June 6, 2006


NAM NGUYEN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700